Laryngeals and Vedic metre

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Within the study of Indo-European laryngeals — a field that has owed so much to Robert BEEKES —, phenomena relating to Vedic metre deserve of special attention. It has for long been stated that vestiges of laryngeals that once existed can be traced in the metrical behaviour of word forms such as *rátha-* "wagon", the first syllable of which has often to be measured as long because of the "position" created by h_2 in the underlying structure **rot.*h_2*o-* (where . marks the original syllable boundary between *t* and h_2, later "merging" into an aspirate *-th-*, probably via a consonant cluster **-*t^h*h-*)[1].

Investigations into this type of material have gained a new basis eversince the text of the R̥gveda-Saṃhitā (RV) exists in a reliable digitalized form. At present, three versions are available to the scholarly world that can be used complementing each other: The edition recently published by Barend VAN NOOTEN and Gary HOLLAND (hereafter: vNH) contains, in electronic form, both the plain Saṃhitā text (according to AUFRECHT's edition) and a metrically restored version of it (mostly following the proposals made by E.V. ARNOLD)[2]. Additionally, a sandhi-free (pada-pātha-like) version was prepared by A. LUBOTSKY for his Rigveda concordance[3]. Although none of these versions contains any metrical data as such, they can easily be adapted to a special computer program which parses the text in order to reveal the metrical shapes present in each verse[4].

In a forthcoming article[5], I have reported about the results of an investigation using such a metrical "parser" with respect to a crucial laryngealistic question that had been raised by the late Jochem SCHINDLER on the occasion of the 1993 Copenhagen meeting of Indo-Europeanists. During the panel discussion about

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[1] Phenomena of this type were noted *passim* in H. OLDENBERG's "Metrische und textgeschichtliche Prolegomena", Berlin 1988, E.V. ARNOLD's "Vedic metre" (Cambridge 1905), and OLDENBERG'S Textkritische und exegetische Noten", Berlin 1909-1912. A first thorough discussion in laryngealistic terms was offered by J. KURYŁOWICZ ("Les effets du ə en indoiranien" ("Effets"), in: Prace filologiczne 11, 1927, 201-243).

[2] Rigveda: A Metrically Restored Text with an Introduction and Notes, Harvard University Press 1994.

[3] My thanks are due to A. LUBOTSKY for contributing this version to the "TITUS" collection of texts relevant for Indo-European studies ("Thesaurus Indogermanischer Text- und Sprachmaterialien"; cf. the WWW page under http://titus.uni-frankfurt.de/texte/texte.htm) and for discussing quite a lot of problematic passages with me.

[4] The parser which was developed as a means for establishing a metrical and a sandhi index to the RV will be made available to the public after completion of the project in question ("AUREA"). — On the basis of an automatical electronic comparison, the different versions were also used to locate typing errors persisting in them. Besides, a list of typing errors as present in AUFRECHT's RV edition was prepared (cf. my forthcoming article "TITUS — Alte und neue Perspektiven", to appear in SIMA 2, Prague 1996).

[5] "Neue Wege zur sprachwissenschaftlichen Analyse der vedischen Metrik"; to appear in the Gedenkschrift für Jochem SCHINDLER.

the phonetics of the laryngeals, SCHINDLER proposed to see a threefold representation of h_2 in cases where words like *duhitár-* "daughter" have to be measured with a long first syllable: Here, h_2, besides causing aspiration (of **-g-*) and invoking a *shewa* (> *-i-*; "vocalization"), obviously created metrical position (schematically: PIE ***d^{h}ugh$_2$tér-* > Proto-Indo-Aryan **d^{h}uǰ^h.hətár-*). Investigating the behaviour of word forms containing the structure *-V̆(T)hi-* (i.e. a short vowel followed by either a plain *-h-* or by an aspirate stop, plus *-i-*), in the most decisive metrical constellation where a long syllable is required, viz. the ictus within the cadence of both dimeter and trimeter verses (syllables 6:8, 10:11 and 10:12), astonishing results were achieved: Of 38 matching examples to be found in the whole RV, 17 belong to the type discussed by SCHINDLER (besides *duhitár-*, cp. e.g. *pṛthivī́-* "earth": ***pl̥th$_2$u̯ih$_2$-* > **pṛt^h.həu̯ih-*). Of the remaining 21 cases, 15 still show position created by laryngeals: cp. e.g. *mahini*, voc.sg.fem. of *mahín-* "great", < **maǰ́^{h}.hin-*, with original *-i-* (not *i* < *schwa*), or *avahitá-*: **au̯ad^h.'ətá-*, √*d^{h}ā-* < √*d^{h}eh$_1$-*, where the aspiration is not caused by the laryngeal. In 6 cases only, the lengthening cannot be assigned to laryngeals with certainty (this is less than a sixth part). The following table lists the results[6]:

Laryn-geal	reflexes	word type:		verse type: syllables: 8	12	11
h_2	threefold: position, aspiration, "vocalization":	*du̱hitā́-* *pṛthivī́-*	**d^{h}uǰ^h.hə.tér-* **pṛt^h.hə.u̯íh-*	4 9	 4	
h_2 (plus *i*)	twofold: position, aspiration:	*ma̱hínī-* *avya̱thí-*	**maǰ́^{h}.hí.ni-* **a=u̯.i̯at^h.hí-*	1	 1	
$h_{1,3}$	twofold: position, "vocalization":	*ava̱hitá-* *vásu̱dhiti-*	**a.u̯a=d^h.'ə.tá-* **u̯á.su=d^h.'ə.ti-*	4 8	 1	
none		*ápra̱hita-* *devayú̱bhiḥ*	**á=p.ra=.ǰ́^{h}i.ta-* **dai̯.u̯a=.i̯ú.b^{h}iš*	1 3		 2

As can be seen from the table, there seems to be a striking difference between 11-syllable verses and 8- or 12-syllable verses in that the former do not show any laryngeal reflexes of the types discussed. This may easily be explained by assuming that the triṣṭubh cadence with its ictus on the paenultima leaves hardly room enough for the word forms in question: We must consider that in this case, the syllable containing *-hi-* has to be the last one; a constellation which is hardly to be met with where laryngeals are involved (but cp. *mahí*, *pathí-*). Nevertheless it seems worth while investigating whether there are principal divergences in the structure of cadences between "even" and "odd" verses in the RV, as far as metrical position created by laryngeals is concerned.

If we want to take unexpected "short" syllables bearing the ictus as a criterion, we first have to define what syllables we regard as "short" from a formal

[6] *áprahita-* belongs to √*hi-* "to send", not to √*dhā-*. The results will slightly differ depending on the treatment of *avyathíbhiḥ* in 7,69,7c (in a Triṣṭubh-cadence); for this and *avyathíṣu* cf. below.

point of view. According to general assumption, short syllables are open syllables containing a short vowel, syllable-final consonant(s) normally producing position (with *muta cum liquida* as a special case) and diphthongs regularly measuring as long. A further special case has to be observed where short vowels are followed either by the palatal aspirate, *ch*, or by the retroflex laterals, *ḷ* and *ḷh*: It can easily be shown that these consonants produce positional length throughout, in accordance with their emergence from former consonant clusters (*ch* < **ść*, *ḷ* < *žd, ǰd* etc.): cp. *gachati* < **gaśćati* or *dṛḷhá-* < **dṛǰdʰá-*[7]. Such cases can therefore be ruled out before starting the investigation[8]. The same holds true for those instances where the second syllable of *pāvaká-* "pure" bears the ictus in cadences[9]: It has been for long generally adopted that *pāvaká-* is but a secondary substitution for an original *pavāka-* yielding "correct" cadences[10]. Lastly we can dismiss those instances where the first syllable of *nṛṇā̂m*, gen.pl. of *nár-/nṛ-* "man", is in the ictus position: Here, the *ṛ* has to be scanned as long[11].

Looking for the remaining instances that match the conditions, the metrical parser gives the following immediate results when asked for "irregular" cadences[12]:

Verse type	8 syllables	12 syllables	11 syllables
total occurences	14973	6924	16939
irregular cadences	1071	153	278
percentage	7,15	2,21	1,64

[7] vNH mark *ṛ* as long in such cases; this gives the correct results although the marking seems not just adequate because we have to deal with positional length here, not with vowel lengthening.

[8] All in all, this constellation is present in the cadence of 116 11-syllable verses, 50 12-syllable verses, and 95 8-syllable verses (based upon the vNH "metrically restored" text). As to figures from less usual verse types, cf. below.

[9] 14 occurrences in 11-syllable verses (3,5,7c; 17,1c; 4,5,6a; 4,6,7c; 6,1,8c; 4,3c; 10,4d; 7,3,1d; 9d; 7,9,1b; 9,97,7c; 10,46,4c; 7b; 8c); one occurrence in an 8-syllable verse (3,21,2a: *ghṛtávantaḥ pāvaka te*).

[10] In vNH, *pavāká-* is written throughout in the printed text; in the electronic (metrical) version, however, three cases of *pāvaká-* have persisted in RV 10,46 (4c; 7b; 8c).

[11] 9 occurrences in 11-syllable cadences (3,52,8b; 4,25,4d; 5,30,12d; 7,1,11a; 19,10d; 62,4d; 10,29,2b; 99,9d; 111,1b – the last three not marked in VNH); 5 occurrences (reading *nṝṇáām*) in 8-syllable cadences (1,48,4d; 3,16,4d; 5,18,5e; 7,32,11d; 8,66,5b) and one in a 12-syllable verse (10,93,12b). In 1,43,7b, we seem to have an exceptional disyllabic *nṛṇā̂m* in an 8-syllable cadence (*ní dhehi śatásya nṛṇā̂m*), in a verse of the so called "trochaic Gāyatrī" type.

[12] Against the "metrically restored" electronic text as provided by vNH, only a few rearrangements were made concerning the separation of verses (especially with respect to the two types of Bṛhatī and Uṣṇih metres as dealt with in OLDENBERG's "Prolegomena", 111 sq.; cp., e.g., RV 3,10 or 8,12 and 13), and some 30 obvious typing errors were corrected. The twelve verses of RV 9,67,27a-d, 31a-d and 32a-d missing both in the printed text and the electronic (metrical) version were added. — It goes without saying that the statistical results obtained here agree to a large extent with the ones offered by E.V. ARNOLD's study; nevertheless it seems worth while entering into the study of Vedic metres again.

Of course, this enormous bulk of material[13] cannot be investigated entirely here, all the more since the less common (and mostly irregular) verse types containing 4 to 7, 9, 10, or more than 12 syllables (all in all 995 verses in vNH) would deserve of a special treatment too. On the basis of the considerations noted above, it seems reasonable to restrict the present study to the cadences of 11-syllable verses[14].

From the 278 verses in question, a relatively large number (63) can be excluded by assuming that they show a regular J-cadence although the number of syllables in the verse cannot be "stretched" easily to give 12. In most of these cases (52), vNH suggest such a solution themselves in their "Metrical notes" (p. 577 sqq.), denoting the verses as "Jg. 11 syll.", "Tr Jg cadence" or the like (often referring to ARNOLD or OLDENBERG); there is no special marking in the electronic text, however. The solution is acceptable if the verse in question is a single 11-syllable line in a J-environment and if it shows a long syllable in the antepaenultimate syllable; cp., e.g., 6,15,1d *jyók cid atti gárbho yád ácyutam* which even by reading *jiyók* contains but 11 syllables. In two hymns, viz. 10,77 and 10,78, this type of verse is even prevalent. According to OLDENBERG's "Noten", it emerged from a replacement of the usual two short syllables after the caesura by one long syllable; cp. 77,1a *abhraprúṣo ná vācā́ pruṣā vásu*, where *vācā́* stands in the position of a regular J-centerpiece consisting of ◡◡–. Like this, we achieve the following list of instances in accordance with vNH: 1,89,4b; 2,13,1a; 24,5b; 36,1a; 5,51,13a; 6,15,1d; 6,48,17c; 8,26,24c; 52,2a; 98,7b; 9,71,7c; 79,1c; 10,23,2d; 4c; 32,4c; 46,7c; 49,1d; 2a; 50,5b; 64,10c; 77,1abcd; 2abcd; 3abcd; 4abcd; 5ab; 78,1abd; 2d; 3bd; 78,4abcd; 78,6cd; 93,7b; 14c.

In the remaining eleven cases, a similar solution is suggested by the fact that the given cadences or the word forms they contain usually occur in the final position of J (or A) verses. This holds true for the following pādas[15]:

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[13] The remarkable difference between dimeter and trimeter verses as revealing itself in the statistics is mostly due to the well known tendency of the Anuṣṭubh metre towards the "epic" śloka-type verse, the normal cadence of which is —× in odd verses; cp. 10,72,1a and c as against b and d:

devā́nāṃ nú vayáṃ jā́nā prá vocāma vipanyáyā /
ukthéṣu śasyámāneṣu yáḥ páśyād úttare yugé //

The structure —× is indeed met with in 375 (from 1071) verses, 306 (153 + 153) of which are a first or third pāda in Anuṣṭubh strophes of this type. Another great bulk of cases (422) increasing the number of "irregular" cadences of eight-syllable verses is the so-called "trochaic Gāyatrī" type with the structure ◡–×; cp. 1,27,10a-c:

járābodha tád viviḍḍhi viśé-viśe yajñíyāya / stómaṃ rudrā́ya dŕ̥śīkam//

Both these types have no counterpart in trimeter verses.

[14] Abbreviations used hereafter: T: 11-syllable (normally Triṣṭubh) verses; J: 12-syllable (normally Jagatī) verses; A: 8-syllable (mostly Anuṣṭubh or Gāyatrī) verses; O: opening; M: centerpiece (of trimeter verses); C: cadence; B: caesura (break). No before-hand distinction will be made between equal verse types occurring in different strophic arrangements (as, e.g., J in normal Jagatī-strophes, 12-12-12-12, or in Bṛhatī-strophes, 8-8-8-12). Note that regularly, cadences of J and A verses have the same metrical shape (–◡×)

[15] If nothing else is stated, all verses will be reproduced hereafter according to the electronic text of vNH where metrically "restored" vowels are marked by italicization (this principle is reversed

1,61,11a *asyéd u tveṣásā ranta síndhavaḥ* (*síndhavaḥ* 8× in JC, 17× in AC; read *asyá/ā́ íd u*[16]?); 1,121,8c *hárim yát te mandínaṃ dukṣán vṛdhé* (*vṛdhé* after a long syllable 8× in JC, 10× in AC); 1,162,22a *sugáviyam no vājī́* suáśviyam (*sváśvyam*, always to be scanned as *suáśviyam*, 3× in JC, 4× in AC [17]); 2,18,2d *só anyébhiḥ sacate jényo vŕ̥ṣā //* (read *jéniyo vŕ̥ṣā* as in 1,140,2c JC); 2,42,2c *pítryām ánu pradíśaṃ kánikradat* (read *pítriyām*; *kánikradat* 7× in JC, 13× in AC); 8 103,5c *tuvé devatrā́ sádā purūvaso* (*purūvaso* 4× in AC); 10,30,13a (*práti yád ā́po ádr̥śram āyatī́r* (*āyatī́* 1× in JC, 4× in AC, cf. OLDENBERG, "Noten" a.l.); 10,59,5c *rārandhí naḥ sū́riyasya saṃdŕ̥śi* (cp. 10,37,6c with *sū́riyasya saṃdŕ̥śi* in a regular JC; similarly *saṃdŕ̥śaḥ* 2× in JC, *saṃdŕ̥śam* 1× in AC); 10,103,8a *índra āsāṃ nayitā́ bŕ̥haspátir* (*bŕ̥haspátiḥ* 3× in JC in a T-context [10,109,5c, 128,7c, 161,4c], 5× in AC; other case forms similarly); 10,132,1b *ījānám bhū́mir abhí prabhūṣáṇi* (all other *-sáni*-infinitives appear in JC or AC: *tarīṣáni* 4,37,7d; 5,10,6d; *gr̥ṇīṣáṇi* 6,15,6b; 8,12,19b; *upastr̥ṇīṣáṇi* 6,44,6b; *sakṣáṇi* 10,32,1a; *śūṣáṇi* 10,93,1d; *neṣáṇi* 10,126,3c; *parṣáṇi* 10,126,3d; *iṣáṇi* 2,2,9d). Lastly, a J-cadence is likely to be seen in 6,25,3a *índra jāmáya utá yé 'jāmayo* (better to be read *ájāmayo* with OLDENBERG, "Noten").

A special case is provided by three 11 syllable verses that should equally rather be scanned as containing 12 syllables, viz. 6,44,11d *jahy ásuṣvīn prá vr̥hā́pr̥ṇataḥ* (read *prá vr̥hā́ ápr̥ṇataḥ* as in 5,7,10c in AC), 1 100,6b *asmā́kebhir nŕ̥bhiḥ sū́riyaṃ sanat* (to be read with a rest after the fourth syllable), and 10,50,5a *ávā nú kaṃ jyā́yān yajñávanaso* (read *jiyā́yān* as in 3,38,5a; cp. *yajñávanasam* in JC in 4,1,2b). Here, we have no overt long antepaenultima to match the ictus of JC; but considering the etymology of the underlying verbs, we can assume that an original root final laryngeal left its traces here in metrical position: *sanat* is a 3rd person singular aor.inj.act. of *san*^{i}- < **senh*$_{2}$- "to gain" ("[Indra] gains the sun together with our men"); and connecting *ápr̥ṇataḥ* "the not generous ones" (acc.pl.: "weed out the misers") with *par*^{i}- (pres. *pr̥ṇā́ti*, < **perh*$_{3}$-[18]) "to give, donate" and *yajñávanas-* "pleased by / longing for sacrifice" ("assist those who are pleased by sacrificing, being superior") with *van*^{i}- (pres. *vanate*, < **u̯enH-*[19]) "to be(come) pleased, to desire", we arrive at the underlying structures *-pr̥n.'a.tas* (< **-pr̥nh*$_{3}$*n̥tn̥s*), *-van.Ha-sas* (< **-u̯enHesn̥s*[20]), and *san.Hat* < **sn̥h*$_{2}$*et*[21].

here).

[16] For the hymn in question (1,61) cf. J.S. KLEIN, The particle *u* in the Rigveda, Göttingen 1978, 108 sq.

[17] In 1,180,9c and 10,113,10a, *sváśvyā* and *sváśvyam* seem to appear in T-cadences; vNH read *suáśvyā / suáśvyam*. Here, the ictus is on a long syllable (*-áś-*) in any case.

[18] Cf. M. MAYRHOFER, Etymologisches Wörterbuch des Altindoarischen ("EWAia"), Heidelberg 1986-, II, 90 sq. s.v. *PAR*^{I2}.

[19] Cf. MAYRHOFER, EWAia II, 501 s.v. *VAN*^{I}- and below.

[20] Or **-u̯onHesn̥s*, cf. below.

[21] That the thematic root aorist had a zero grade root is made probable by clear cases such as *(á-)vidat*; cf. R. BEEKES, in: Die Laryngaltheorie, ed. A. BAMMESBERGER, Heidelberg 1988, 65 for **snH-o-m* and T. GOTŌ, Die "I. Präsensklasse" im Vedischen ("Präs.Kl."), Wien 1987, 284 for the corresponding thematic root aorist stem **un̥H-é-* from **u̯enH-* "to desire", O.Ind. *vaná-* (cf. below). According to J. NARTEN, Sprache 16, 1968, 119, the formation of the thematic aorist of *san-* can be assigned to the Indo-Iranian stage. — For the phonetic development involved (**-n̥HV- > -an.'V-*) cf.

This type of laryngeal traces is not restricted to 12-syllables verses though. Within irregular cadences of 11-syllable pādas, it can be found in a surprisingly high number of cases. Starting with the structure of the last mentioned examples, i.e. -V̆NV- < *-V̆N.HV- (with V̆ standing in the cadence ictus, N representing any resonant, H, any laryngeal) this can be made responsible for at least 20 cases. In 13 of these verses, the cadence contains either *jánāḥ* or *jánān*, nom./acc.pl. of *jána-* "man", as in 4,38,9a *utá sma asya panayanti jánā* "and the men praise his (Dadhikra's) (zeal ...)" (the other cases: 1,89,10c; 173,8d; 2,20,2b; 3,46,2d; 5,33,2d; 6,10,5d; 11,4d; 20,1b; 49,15c; 51,11b; 67,3c; 68,5d); this is nearly one fourth of all occurrences of the word (54)[22]. As *jána-* has to be connected with *jan*^{i}- < *ǵenh$_1$- "to beget" (most probably *ǵónh$_1$o-[23]), its treatment is equivalent to the one of *-vanasaḥ* as noted above.

A similar case is provided by *śavaḥ* "strength" (≈ *śau.'as* < *ḱeu̯h $_1$os[24]) as in 1,186,2d *káran suṣáhā vithurám ná śávaḥ* "they will make (things) easily defeatable like a wavering power" (two further attestations in TC: 6,19,6a; 10,148,4b[25]; cp. 1,27,2a; 127,11g; 3,37,1a; 5,7,3c; 20,2b; 52,2a; 87,1e; 6,14,4c; 44,3a; 8,1,21b; 2,30c; 9,20a; 68,4b; 70,6b; 92,14a; 10,105,6b, where three syllable case forms like instr. *śávasā* appear in irregular ACs). One further instance would have to be added if in 1,122,10b the substitution of *gūrtáśravāḥ* "whose glory is praised" by **gūrtáśavāḥ* "whose power is praised", proposed by Chl.H. WERBA[26], is right: *śárdhastaro narā́ṃ gūrtáśravāḥ*. We have to note, however, that the same constellation — a masculine *-s*-stem as the second member of a compound in an irregular TC — is attested three more times, viz. in 1,89,6a (*vr̥ddháśravāḥ* "whose glory grows"), 1,167,5b (*nr̥máṇāḥ* "having men's mind"), and 10,61,1a *gūrtávacāḥ* "whose speech is praised"); for none of these, a laryngealistic explanation is possible[27]. Instead, we should consider that this behaviour might be due to an ablaut difference between *-s*-stem simplicia and compounds, *-śravāḥ* and the like having been "regularized" for an older *-*śrāvāḥ* from *-o*-coloured *-*ḱlou̯ēs* as the compound variant of **ḱléu̯os*[28]. The "regularization" leading back to *-śravāḥ* would then be equivalent to what happened in Greek εὐμενής if this replaced a former **h$_1$su-monēs*. A similar view is possible for *suśrávasam* in 1,91,21c, and *suprayásam* in 2,4,1b. Here, it is the suffix vowel which seems to bear the

below.

[22] This is why its behaviour was noted as early as in OLDENBERG's "Prolegomena" (1988, 478); it was treated in KURYŁOWICZ, o.c., too.

[23] Cf. R. BEEKES, o.c., 64, who notes this word as an "apparent exception to Brugmann's law" produced by "a postconsonantal laryngeal"; further cf. MAYRHOFER, "EWAia" I, 566.

[24] *ŚAV*^{i}- < **ḱeu̯h$_1$*- according to MAYRHOFER, "EWAia" II, 623 sq.

[25] This verse seems to lack one or two syllables, cf. the restoration *dā́ nŕ̥bhyo nr̥ṇā́ṃ śūra śávaḥ* in vNH; but it has as clear a T-cadence as the surrounding verses.

[26] In: WZKS 36, 1992, 15.

[27] But cf. below for *-mahas-*.

[28] Cp. J. WACKERNAGEL, Altindische Grammatik ("AiGr") II/1, Göttingen 1905, 101, § 43 who mentions *ví-hāyas-* "having extended power" and *sárva-hāyas-* "having all power(s)" (after OLDENBERG). The process envisaged here would well be motivated if J. SCHINDLER's (unpublished) assumption of a regular ablaut shift leading from proterodynamic to hysterodynamic stems in derivation and composition is right.

ictus; cp. _bhareṣujā́m sukṣitím suśrávasam_ "(Soma), born in battles, (gaining) good abodes, having good reputation"; _viśā́m agním átithiṃ suprayásam_ "Agni, the guest of the houses, the one granting good favour(s)". If we suppose, however, that these pādas are "shortended" Jagatī verses, _suśrávasam_ can be accounted for in the way indicated above (_*su-śrā́vasam_ < _*h$_1$su-ḱlóu̯es-m̥_). For _-prayás-_, there is an easier solution even because this word contained a root final laryngeal[29] (_*su.prai̯.há.sam_ < _*h$_1$su-proi̯Hés-m̥_); indeed, its simplex also occurs once in a comparable TC environment, viz. 2,19,1b _mánīṣiṇaḥ suvānásya práyasaḥ_ "(there is a drink), exstatic ones, (made) from the pressed delightment" (cp. _*prá͡i.Ha.sas_ < _*pré/ói̯.Hes.os_). We must not neglect, however, that this analysis too presupposes the "stretching" of the given 11-syllable verses to Jagatī pādas (by adding a "rest" before the caesura).

The same surface structure as in _śávas-_ is present in _urú_ "wide" (6,50,3a _utá dyāvāpṛthivī kṣatrám urú_ "and (you), heaven and earth, (bestow upon us) wide suzerainty") and in two derivatives of _tar^i-_ < _*terh$_2$-_ "to pass, transgress, overcome", viz. _táturi-_ "overcoming" (4,39,2d _dadáthur mitrāvaruṇā táturim_ "(Dadhikra, whom ye,) M., gave (to the Pūrus) as the winning one"; 6,68,7d _táturiḥ_) and _vṛtratúram_ "overcoming the foe" (6,20,1d _daddhí sūno sahaso vṛtratúram_ "son of might, give (us wealth) to overcome the foe"). Here, the vowel bearing the ictus most probably developed in a sequence of a syllabic sonant plus a laryngeal, i.e., *-R̥HV- > -uR'V- (_*-tr̥h$_2$-_ / _*u̯r̥H-u-_; cp. _sanat_ < _*sn̥h$_2$et_ as discussed above).

Some further cases are less clear. First, we may seek _van^i-_ in two compounds appearing in 5,41, viz. _ṛjuváni-_ (5,41,15d _smát sūríbhir ṛjuhásta_ ṛjuvániḥ) and _upamātivani-_ (5,41,16e _asmā́kam bhūd · upamātivániḥ_). Usually, these compounds are connected with the root _van-_ meaning "to win, to defeat" (cp. GELDNER's translations, "die redlichen Gewinn bringt" and "der Gewinner von Schenkungen"). But in the following verses (17bc), we read _dévāso · vánate mártiyo va | ā́ devāso vanate mártiyo vaḥ_[30], which, according to T. GOTŌ's study[31], could easily be understood as containing _van^i-_ "to desire": "Gods, the mortal one desires you; the mortal one, Gods, desires you (to come) to (him)". If this is correct, we may interpret _ṛjuváni-_ as "whose desire is straight" (speaking about "mother Rasā́"), and _upamātivániḥ_ as "the one longing for allotments" (Ahi Budhnya)[32], even though _vasuváni-_ (7,1,23c) and _vṛṣṭiváni-_ (10,98,7c), both occurring in TM, are rather derived from _van-_ "to win" ("gaining good(s)", "winning rain"); cp. 7,15,4c _vásvaḥ kuvít vanāti naḥ_ "he (Agni) will for sure win us some good" and 10,98,3c _yáyā vṛṣṭíṃ śáṃtanave vánāva_ "(the speech) by which we shall win rain for Śaṃtanu"[33]. If we accept

[29] Cf. MAYRHOFER, "EWAia" II, 181 s.v. _PRAY^i-_.

[30] The "rest" after _devā́so_ in 17c, indicated in the printed edition of vNH, is not present in the electronic text and should be dismissed.

[31] "Präs.Kl.", 284; GOTŌ mentions verse 17b only.

[32] No other forms of _van-/van^i-_ appear in any context together with Rasā or Ahi Budhnya in the RV.

[33] Cf. J. NARTEN, Die sigmatischen Aoriste im Veda ("Sigm.Aor."), Wiesbaden 1964, 235 with n. 716.

J. WACKERNAGEL's proposal that in the present type of compounds, the *-i-* belongs to the root whenever it is not accented[34], we should expect that *-váni-* represents a seṭ root in both cases. But the differentiation of *van-* "to win" and *van^i-* "to love, to desire" into one aniṭ and one seṭ root[35] does not work in all cases[36]: Note, e.g., that the accusatives *vasuvánim* and *vr̥ṣtivánim* are also located in a position where their third syllable should be long, viz. in the position after the caesura in T verses: *sá devátā vasuvánim dadhāti* (∪–∪–/∪∪—\∪–∪: 7,1,23c) and *devaśrútaṃ vr̥ṣtivánim rárāṇo* (—∪–/–∪—\∪–∪: 10,98,7c). So this cannot disprove the hypothesis that *-váni-* in *r̥juváni-* and *upamātiváni-* represents an underlying **-u̯énH-*[37], i.e., a root noun from a seṭ root as a second member in a compound. Regarding the measuring of *-va-* as long in 5,41, we can offer two different explanations then: either, this is a case of a "twofold" reflex of a laryngeal, manifesting itself by position + "vocalization" (**-u̯án.Hiš < *-u̯énHəs < *-u̯énHs*), or it is the trace of a former lengthened grade to be expected in the nominative of this type of compound (cp. the type of *vr̥trahā́*). The first solution seems to be preferable if we consider that the formations in *-i-* were usually remodelled as *-i-*stems showing no ablaut in the root syllable at all[38] (cp. the plural genitives *mahiṣváṇīnām* and *tuviṣváṇīnām* appearing in 8,46,18cd, both belonging to *svan^i-* "to roar").

The same structure can then be seen in *suśámi* in 5 87,9a *gántā no yajñáṃ yajñiyāḥ suśámi* "come to our sacrifice with good execution, venerable ones", if this belongs to *śam^i-* < **ḱemh$_2$-* "to finish; get finished, get tired, calm down / be finished with"[39]: Although the form is not completely clear morphologically, the *-i* can be an immediate reflex of the root final laryngeal, which additionally left its traces in metrical position. If we adopt to this view, we can further assume that in *avyathí-* "not wavering, steadfast" too, the *-í-* is a reflex of the root-final laryngeal (**u̯ieth$_2$-*), although it was (secondarily) accented[40]. This would add *avyathíṣu* (8,2,24a in AC) to the group of cases showing threefold laryngeal effects (**a.u̯iat^h.hi.šu < *a.u̯iat^h.hə.šu < *n̥-u̯ieth$_2$su*); and the same assumption could be made for *avyathíbhiḥ*, occurring in 7,69,7c in TC (*patatríbhir aśramaír avyathíbhir* "(you, Aśvins, saved Bhujyu) with (your) winged (horses) which never get tired, which never stumble"), provided that we can "stretch" the verse to have 12 syllables, either

[34] WACKERNAGEL argued in reverse direction ("AiGr" II/1, 224, § 92d): "wo dagegen *i* wurzelhaft, also das Hinterglied eigentlich suffixlos ist, gilt .. Paroxytonese".

[35] For the separation of *VAN-* and *VAN^I-*, cf. MAYRHOFER, "EWAia" II, 499 and 501.

[36] It seems that *van-* "to win" developed more and more into *van^i-* under the influence of both its quasi-homonym, *van^i-*, and its synonym, *san^i-*; cp. NARTEN, "Sigm.Aor." 235, n. 712.

[37] Cf. KURYŁOWICZ, "Effets", 233: "L'accentuation des *tatpuruṣa's* en *-sáni*, *-váni* etc., prouve que l'*i* < *ə* n'est pas traité comme un *i* originaire".

[38] This derivation seems to be preferred by St.W. JAMISON, in: Die Laryngaltheorie, ed. A. BAMMESBERGER, Heidelberg 1988, 222 with n. 16.

[39] Cf. MAYRHOFER, "EWAia" II, 610 sq.

[40] Cf. JAMISON, o.c., 222, who mentions the six occurrences of "nom./acc. *(-)vyáthis*" in the RV.

by inserting a rest at the caesura, or by replacing *aśramaír* by the concurrent instrumental, *aśramébhir*[41].

The same type of laryngeal residue could further be assumed in 5,33,7a the cadence of which contains the imperative *ava* "help" according to the arrangement proposed in vNH: *evā́ na ind*ara *ūtíbhir ava* "(come) hither to us like this, Indra, with your help(s); help (, protect the poets) ...". There can be no doubt that the root present in *ava* contained a laryngeal that could be responsible for the first syllable to be measured as long (**au.Ha* < **h₂eu̯He*); cp. the *-s*-stem dative *ávase* (**h₂éu̯Hos-*) which appears 22× in AC and 6× in JC. As to the analysis of the verse in question, however, there is room for serious objections. Given that the following *pāda* has 9 syllable as it stands (*pāhí gr̥ṇatáḥ śūra kārū́n*), *ava* seems rather to belong to this than to 7a, all the more since *ūtíbhiḥ* would produce a perfect 8 syllable cadence (as it does in 43 other A verses). Of course we would have to expect *ava* to be accented in this case (*áva*) so that a correction of the traditional text would be necessary in any way[42].

Another word that is not easy to account for is *śáru-* "arrow, weapon" which appears two times in TC; cp. 1,186,9c *ádha yád eṣām sudíne ná śárur* "when (the Maruts' armies attack) like a thunderbolt on a clear day", and 10,99,7b *ā́ sāviṣad arśasānāya śárum* "he (Indra) will create the weapon for Arśasāna" (for the formula, cp. 7,45,3b *ā́ sāviṣad vásupatir vásūni* where Savitr̥ is meant). Reconsidering an etymological connection of *śáru-* with the seṭ root *śar* ⁱ- meaning "to dash, to smash"[43], these cases could easily be explained by assuming position invoked by the root final syllable again: *śáru-* < **śár.Hu-*[44]. Note that although both instances belong to allegedly late hymns, the first one at least has a clear formulaic character[45].

One further type that might belong here is attested all in all 20 times. This type consists mostly of superlatives showing the suffix *-tama-* as in 5,41,4d *ājíṃ ná jagmur āśú*aśvatamāḥ "(they have come to the sacrifice) just as the

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[41] But we have to concede that within 7,69, this would be the only 12-syllable verse in a pure Tristubh environment. Should we rather suppose that *avyathíbhiḥ* was restored from an original *avyáthī* showing the deletion of the ending *-bhiḥ* in an environment where group inflection can be assumed (cf. L. RENOU, Grammaire de la langue védique, Paris 1952, 83, § 105, or C. WATKINS, Indogermanische Grammatik ("IGr") III/1, Heidelberg 1969, 143, § 130 for examples)? In this case we would still have to "fill" the verse in order to arrive at 11 syllables.

[42] Cf. OLDENBERG, "Noten" a.l.; according to GELDNER (translation a.l.), "das Metrum ist nicht in Ordnung" in 7ab. Instead of *áva*, we could even think of substituting *déva*. The corruption could be due to a mutual influence between *evā́*, *áva* (inserted as a gloss), and *déva*.

[43] This etymology was upheld by WACKERNAGEL-DEBRUNNER ("AiGr" II/2, 475) but styled as "semantisch wenig befriedigend" by MAYRHOFER, "EWAia" II, 618.

[44] Like this, the old comparison with Greek κεραυνός "thunderbolt, flash" has to be reconsidered too (cp. GELDNER's translation of 1,186,9c: "wenn dann wie ein Blitz bei heiterem Himmel ..." with Φ 199-200: ἀλλὰ καὶ ὃς δείδοικε Διὸς μεγάλοιο κεραυνὸν | δεινήν τε βροντήν, ὅτ' ἀπ' οὐρανόθεν σμαραγήσῃ.). Should *śáru-* — pace FRISK — reflect the same original *-ur/n-*stem as the Greek word does? A nom. *śáruḥ* / *śárur* < **ḱérh₂ur*, could indeed have been metanalysed as a fem. *-u*-stem, *śaru-ḥ*. The development of **-VrHur* > **-V̂r̥.Hur* might have been supported by some oblique case forms showing **-VrHunV-* > **-Vr.Hu̥.nV-*.

[45] The instr.sg. *śárvā* is trisyllabic (*śáruvā*) throughout in the RV (5×: 1,100,182b; 2,12,10b; 4,28,3d; 7,85,2d; 10,87,6d: always in TM).

(riders) having the fastest horses have come to the race" (the other examples: 1,61,1d *rātátamā*; 1,158,5a *mātŕ̥tamā*; 1,169,5a *tośátamāḥ*; 2,20,6b *dasmátamaḥ*; 4,4,3a *tū́rṇitamo*; 6,4,7d *nŕ̥tamāḥ*; 6,29,4d *devávātatamāḥ*; 6,33,3d *nṛtama*; 6,33,5d *gosátamāḥ*; 6,37,4b *tuvikūrmítamaḥ*; 6,38,1a *citrátamo*; 6,50,7c *mātŕ̥tamā*; 6,62,5a *puruśā́katamā*; 6,63,3b *suprāyaṇátamam*; 6,67,1a *jyéṣṭhatamā*; 10,3,6c *devátamo*; 10,6,6c *índravātatamā*). The same structure may be seen in adjectival *-amá*-stems designating extreme local positions like *paramá-* "the most distant one"; cp. 6,25,1a *yā́ ta ūtír avamā́ yā́ paramā́* "whatever help from you, the nearest one and the most distant one" (another example with *paramá-* in 1,167,2c). The derivation from a former **-tm̥mo- / *-m̥mo-* as proposed by Wackernagel / Debrunner ("AiGr" II/2, 609 / 752) could easily be motivated if we assume an underlying **-tm̥Ho- / *-m̥Ho-*, implying again that the laryngeal was able to invoke metrical position after a sequence of short vowel + consonant resulting from an original syllabic sonant (schematically: **-m̥Ho- > *-amHo-*). We cannot exclude though that the metrical behaviour in these cases is due to an expressive lengthening of either the vowel or the consonant involved.

A special case is provided by three instances where a gen. or loc. dual stands in TC; cp. 6,29,2c *ā́ raśmáyo gábhastiyo sthūráyor* "(the charioteer,) the reins in (his) firm hands ...", similarily, with pronominal *ayór*, 6,25,6a *sá patyata ubháyor nṛmṇám ayór* "he (Indra) disposes of the manly courage of both these (sc. armies)". Discussing forms such as *pitrós* which has always three syllables in the RV, K. Hoffmann proposed to reconstruct the ending of the gen.-loc.du. as **-$h_1$ou̯s* (in his notation, **-$ə_1$ou̯s*)[46], which would well account for these two instances (*-ayoḥ < *-ai̯.'au̯s*). The same holds true for *bhuríjoḥ* in 4,2,14c *rátham ná kránto ápasā bhuríjor*: No matter whether *bhuríj-* means "arm" here (cf. Geldner: "mit der Arme Arbeit"; Mayrhofer, "EWAia" II, 266: "Arme, Hände") or, rather, a two-part tool like scissors (cf. Grassmann: "Scheere; Schnitzbank"; "like the ones making a chariot with the endeavour of their tongs"), this form will contain the same dual ending, **-$h_1$ou̯s*. But note that here, the laryngeal must have produced metrical position in combination with a stop: *bhu.rij.or < *b^hṛ.'i̯ǰ/ǰ.'au̯s*[47].

This same development can be assumed for the two irregular T-verses the cadence of which contains forms of *dhā-*, viz. 1,103,4d *yád dha sūnúḥ śrávase nā́ma dadhé* "the name 'son of power' which he (Indra) has acquired (for himself)" and 6,62,9a *yá īṃ rā́jānāv ṛtuthā́ vidádhad* "the one (of the) two kings (Mitra and Varuṇa) who (recognizes the demon), ruling according to the seasons". Here, we have to deal with a sequence of an inherited media aspirata plus h_1 which produced metrical position: *dadhé < *dad^h.'ái̯ < *de-d^hh_1-éi̯, -dádhat < *-dád^h.'at < *-dé-d^hh_1n̥ts*.

Much better attested are those word forms where the second laryngal left its traces in both the aspiration of a preceding stop and in metrical position. This type comprises first 15 instances of *rátha-* and its derivatives (**rátha- <*

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[46] In: Aufsätze zur Indo-Iranistik ("Aufs.") II, Wiesbaden 1976, 561, n. 2.

[47] The etymology of *bhuríj-* remains unclear; cf. Mayrhofer, "EWAia" II, 266.

*$ *rát^h.ha- < *róth_2o-$), and 6 instances of *sákhi-* and compounds (nom. $*sákhā < *sák^h.hā < *sék^uh_2ō(i)$); cp., e.g., 4,16,20b *bráhma akarma bhŕgavo ná rátham* "we have made (now) a prayer (for Indra) just like the Bhrgus (made) a chariot" (the same cadence is repeated in 10,39,14b *átakṣāma bhŕgavo ná rátham*), or 4,4,10c *tásya trātā bhavasi tásya sákhā* "you will be his protector, his friend" (the other attestations: *rátha-*: 1,77,3b; 100,16c; 141,12b; 186,8c; 2,20,1b; 5,31,5c; 33,5b; 6,65,2b; 66,7b; 99,4c; *sákhi-*: 1,63,4a; 4,17,18a; 7,34,24b; 7,96,2c; 9,96,2c). The same type can further be seen in *vadhaíḥ* in 1,121,9d *chúṣṇam anantaíh pariyāsi vadhaíh* "(when) you (Indra) overcome Śuṣṇa with endless strokes"[48]. As *vadhá-* obviously belongs to the verbal root *vadh-* "to kill, to strike" and as this root is most likely to have been an aniṭ root *vadh^i-* on account of its *-iṣ*-aorist[49], *vadha-* will represent an underlying $*uad^h.há- < *uod^hh_2ó-$. Here, we have to note a difference as against *rátha-* and *sákhi-* in that we cannot decide whether the aspiration was triggered by the laryngeal alone or whether there was an original aspirate media (cp. $*roteh_2$, sek^uetoi with plain stops).

A special case is created again where the aspirate emerging from a sequence of a stop plus h_2 developed into Old Indic *h*. This case seems to be present in four verses the cadence of which contains either *mahīm* "big" (acc.sg.fem.) or compounds with *mahas-* "largeness" as their second member; cp. 10,74,4c *sakṛtsúvaṃ yé puruputrām mahīm* "who (want to milk the cow) that has born once, that has many calves, the big one"; 6,37,5b *índro gīrbhír vardhatām vṛddhámahāḥ* "may Indra grow by the songs, (he) whose largeness has increased" (another instance of *vṛddhámahāḥ* in TC is 6,20,3b); and 6,3,6b *śocíṣā rārapīti mitrámahāḥ* "he (Agni) mutters with (his) flame, (he) who has the largeness of Mitra". These cases can easily be accounted for if we suppose an underlying $*máj́^h.h- < *méǵh_2-$[50].

A word strongly reminding of *máh-* "large" with respect to its metrical behaviour is *áhar/n-* "day". In TC, we meet its locative *áhan* three times; cf. 4,12,1b *trís te ánnaṃ kṛṇávat sásminn áhan* "three times preparing food for you (Agni) on the same day" (the same cadence in 10,95,11c) and 10,68,11c *rātryāṃ támo ádadhur jyótir áhan* "they (the fathers) installed darkness in night and light in day". A fourth instance of *áhan-* in TC may be seen in 1,140,13c *gávyaṃ yávyaṃ yánto dīrghāhā* "(aurorae), going (up) for (abundance in) cows (and) corn, for long days ...", if this has to be scanned as proposed in vNH: *gávyaṃ yáviyaṃ yánto dīrghā áhā*[51]. If we consider that in 8-syllable verses too, the word figures three times in irregular cadences as in 1,132,1d *nédiṣṭhe*

[48] Cf. K. HOFFMANN, Der Injunktiv im Veda ("Inj."), Heidelberg 1967, 191 with n. 156 for the passage in question.

[49] Cf. NARTEN, "Sigm.Aor.", 233.

[50] According to J. SCHINDLER (in: Festschrift for Henry HOENIGSWALD, 345 with n. 50) the *-s*-stem *máhas-* (as contained in *vṛddhámahas-* and *mitrámahas-*) was only secondarily remodelled after the adjective *máh-* < *$*meǵ-h_2$*, its original form being **meǵ-es-* with no laryngeal. If this is right, we have to assume that either the remodelling took place early enough to be able to produce metrical position (**meǵ-es* > **meǵ-h-es*) or we have the reflex of a compound *-o*-grade here (**-moǵ-es*, cp. the examples discussed above).

[51] Cf. OLDENBERG, "Noten" a.l. for a discussion of this and other possibilities; according to him, we should expect a shortening of the final syllable (*dīrghā* > *dīrghá*) in this case.

asmín áhani "on this next day" (the other instances, always with *áhani*: 5,82,8a; 10,18,4a), this can hardly be accidental. As the etymology of *áhar/n-* is far from being clear[52], we remain free to analyze *áhan* and *áhani* as $*\acute{a}\acute{j}^h$*.han* and $*\acute{a}\acute{j}^h$*.ha.ni*, resp., the aspirate deriving from a former sequence of a palatal stop plus h_2 (*$*\acute{e}\acute{g}h_2en$*?).

A similar problem is posed by *bṛhán* "high" in 6,24,3a *ákṣo ná · cakríyoḥ śūra bṛhán* "like the high axle (protruding) over the two wheels, hero, (you, Indra, by your largeness, protrude over the two worlds)". But as this metrical behaviour remains unique within the attestations of *bṛhánt-*, we should not search for a laryngealistic solution, all the more since the syntactical construction is not totally clear[53] and the verse looks defective (note the "rest" inserted after the third syllable in vNH)[54].

A different type of laryngeal treatment responsible for irregular cadences can be seen in a set of five instances where the second syllable of *iṣirá-* "lively, frisky, vigorous" has to be measured as long; cp. 5,37,3b *yá īṃ váhāte máhiṣīm iṣirām* "(a husband) who will marry her as (his) lively spouse" (the other instances: 2,29,1a; 9,96,15c; 10,68,3a; 98,3b). If the supposed derivation from a preform *$*(H)ish_1ró$-* connecting *iṣirá-* with Greek ἱερός is right[55], we may attribute the metrical behaviour to a variant **iṣīrá-* (later removed by the redactors) where the laryngeal was reflected by *-ī-* as, most probably, in *ga(m)bhīrá-* "deep". This solution remains questionable, of course, as long as the conditions under which *-ī-* emerged have not been established[56]. But the view that the second *-i-* derives from a former laryngeal seems to be supported by two instances where *iṣé*, dat.sg. of the verbal root noun *iṣ-* "to urge, push forward, send out, further", bears the cadence ictus; cp. 10,50,3a *ké té nára indara yé ta iṣé* "who are the men, Indra, who (care) for your refection" (the second example: 6,13,2a). If this is the same root as the one present in *iṣirá-*[57], we might well suppose that it was the root final laryngeal here which produced metrical position (**iš.Hái̯*).

The same development as with *iṣĭ̄rá-* can perhaps be assumed to explain the irregular cadence of 10,108,8a *éhá gamann ṛ́ṣayaḥ sómaśitā* "the seers will come hither, (their senses being) 'whetted' by Soma". According to this interpretation, the compound *sómaśita-* contains the verbal adjective *śitá-* pertaining to the root *śā-/śī-*[58] which can be derived from $*\acute{k}eh_3$-/$\acute{k}h_3$-.

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[52] Cf. MAYRHOFER, "EWAia" s.v. who remains sceptical as against a connection with the Germanic word for "day" (OHG *tag* etc.).

[53] Cf. OLDENBERG, "Noten" and GELDNER's translation a.l.

[54] Should *bṛhán* be influenced by **mahā̆n*? Cf. the proposal by H. BERGER according to whom Pāli *brahant* has to be explained in a similar way (Zwei Probleme der mittelindischen Lautgeschichte, München 1955, 21).

[55] Cf. BEEKES, o.c., 62; MAYRHOFER, "EWAia" I, 199 is more cautious.

[56] Cf. JAMISON, o.c., according to whose results **iṣīra-* is hardly motivated. — Another solution for **iṣīrá-* could consist in assuming an influence of its synonym, *jīrá-* where *-ī-* most probably resulted from *i* + laryngeal (*$*g^uih_3ro$-*).

[57] Cf. MAYRHOFER, "EWAia" I, 198 and 271 sq. s.v. *eṣ*^{2}-; for the verbal root, MAYRHOFER thinks of h_2.

[58] Cp. GELDNER: "durch Soma scharf gemacht"; GRASSMANN: "durch Soma geschärft".

Although a variant **śīta-* seems not to be a regular outcome from **ḱh₃tó-* (> **ḱətó-?*), it might well have emerged by influence of other zero grade forms in the paradigm such as *śiśīte*[59]. If it had, it could have been removed by the redactors because of the conflict with its homonym, *śītá-* "cold"[60].

A similar case seems to be provided by 6,50,2a *sujyótiṣaḥ sūriya dákṣapitṝn* "sun (god), (ask) the beautifully shining ones, whose father is Dakṣa ...". But although *pitā́* "father" derives from **ph₂tḗ(r)*, it would very hard to restore *-pitā* as **-pītā* (< **pətā*) in this unique case. The second attestation of *pitā́* in an irregular cadence, in 7,55,5a *sástu mātā́ sástu pitā́* "may mother sleep, may father sleep", is not comparable and does not help.

In 9,88,1c, the cadence is represented by a finite verbal form, *vavr̥ṣé*: *tuvám ha yám cakr̥ṣé tvám vavr̥ṣá* "(the Soma drink) which you (Indra) have made and chosen for yourself". If the attribution of this form (a 2nd person sg.perf.med.) to the root *var⁽ⁱ⁾-* "to choose" is correct, we should expect a reflex of the root final laryngeal (**u̯elh₁-*) in a form like **vavūrṣe* (**vaūrṣe*?) < **u̯e-ulh₁-sói*. This could have been remodelled as various other forms of the paradigm were[61]; in the present verse, the cooccurrence of the "rhyming" *cakr̥ṣé* could have supported the substitution.

The same effect — the substitution of a seṭ zero grade by an aniṭ one — is visible in *sasavā́n*, nom.sg. of the perf.act. participle of *sanⁱ-* "to gain" which appears three times in irregular T cadences; cp. 9,74,8b *kā́rṣmann ā́ vājī́ akramīt sasavā́n* "the racer, having won, has reached the (finishing) mark" (the other two instances: 7,87,2b; 10,29,2d). The process by which **sasāvā́n*, the regular outcome of **se-sn̥h₂-u̯ó(n)s*, was secondarily replaced by *sasavā́n*, was clearly demonstrated by K. HOFFMANN[62]; in the attestations in TC, we have a clear vestige of its former existence.

In 3,20,5d the cadence is represented by *ihá huve*: *vásūn rudrā́m̐ ādityā́m̐ ihá huve* "I call the Vasus, the Rudras, (and) the Adityas (to come) hither". The proposal to see a Jagatī cadence here (reading *ādítiyā́m* as in 1,45,1b) was rejected by OLDENBERG ("Noten" a.l.) who stated that we should expect a lengthened **ihā́* in this case. The present TC could be motivated if we were to assume that *huvé*, 1st person sg. of an old root present[63], contained a sequence of two laryngeals originally (**ǰʰuH.hái̯* < **ǵʰuH.h₂ái̯*); but such a laryngeal treatment would remain unparalleled.

A comparatively large set of cadences is characterized by short word final vowels bearing the ictus. Here we have to differentiate two types, depending on whether the following word has an initial consonant or not. The latter case, represented by verses like 7,42,4c *súprīto agníḥ súdhito dáma ā́* "Agni, the well satisfied one, well installed in the (sacrificer's) house", occurs five times in TC (the other instances: 1,60,4c; 149,1b; 2,4,3d; 10,105,4a). It can easily be

59 Cf. JAMISON, o.c., 223 sqq. for a discussion of this type of presents.

60 This belongs to *ŚYĀ* "to freeze", cf. MAYRHOFER, "EWAia" II, 660 sq.

61 Cf. HOFFMANN, "Aufs." 1, 247 sq., according to whom the remodelling was probably due to the unusual shapes the root gained when *v* was lost in sequences of *v* + *u/ū*.

62 In: "Aufs." II, 544 sq.

63 Cf. NARTEN, "Sigm.Aor." 288.

accounted for by assuming that here, the final vowel, reduced to short *a* by later application of sandhi rules, has to be restituted in its original form (e.g., *dam*e *ā̂*). This solution, envisaged but not carried out by vNH[64], has no bearing on laryngeal reconstruction, of course. The same holds true for most of the examples representing the second case, i.e. word final short vowel before initial consonant. This comprises two verses ending in *hí sáḥ* (cp. 5,2,4c *ná tā̂ agr̥bhrann ájaniṣṭa hí sáḥ* "they did not seize him, for he was just born"; the second example is from the same hymn, 5,2,7b); four verses have *úpa naḥ* (cp. 4,16,1b *drávant*u *asya háraya úpa naḥ* "his dun (horses) are to run towards us" (the other examples: 4,21,1a; 7,92,1a; 93,6a); one case each is provided by *sú naḥ* and *u naḥ* (2,20,1a *vayáṃ te váya indra viddhí sú naḥ* "we (bring) you, Indra — recognize us well! — a refreshment"; 6,51,10a *té hí śr*áyi*ṣthavarcasas tá u nas* "for they are the most beautifully brilliant ones, and they (lead) us .."); and in 5,41,5b, the verbal ending *-ta* bears the ictus: *rāyá éṣ*e á*vase dadhīta dhī̂ḥ* "searching for wealth, may the song be used for help". In all these cases the problem would be solved if we could substitute a lengthened variant for the word forms in question; we have to admit though that while *ū* and *sū* are as well attested as the lengthened variant of the medial ending, *-tā*[65], **úpā* and **hī̂* do not occur in the Saṃhitā text. A further example of *hí* bearing the TC ictus can be excluded with certainty: In 1,36,12ab *rāyás pūrdhi svadhāvó* á*sti hí té | ágne devéṣu ā̂piyam*, the verse boundary should rather be inserted before *(á)sti*, given that the sequence of *ásti* plus *hí* plus enclitic appears only verse-initially elsewhere.

A laryngeal can be involved in just one such case, viz. in 1,62,5a *gr̥ṇānó áṅgirobhir dasma ví var* "praised by the Aṅgirases, you, the master, opened (the darkness)". *var* is an aorist injunctive of *var-* "to enclose", the indicative of which has a long augment throughout (*āvar*, e.g. in 1,92,4d; 1,113,4b; 13b; 4,52,6b; 5,45,1d; 6,44,8d; 7,95,6b; 8,9,16c; 9,97,38b). The only counter-example would be 5,31,3c where *támo 'vaḥ* is written; but this should rather be read as *támo vaḥ* again (with an injunctive as in 1,62,5a)[66]. If the long augment is a reflex of a root-initial laryngeal (**e-Hu̯el-t*)[67], this same laryngeal could be responsible for the lengthening of *ví* in the cadence of 1,62,5a (**vī̂ var* < **u̯í Hu̯elt*), assuming a word internal development for the sequence of preverb + finite verbal form.

Yet another type of laryngeal development can be seen in 1,173,12b *ásti hí ṣmā te śuṣminn avayā̂ḥ* "for there is, ardent one (Indra), an apology (going on) to you (by the sacrificer)". If we are right in assigning four syllables to the word in question, *avayā̂-* "apology", as was proposed by OLDENBERG[68], this

[64] Cf. the introduction, p. vi.

[65] Cp., e.g., *śiśītā* in 8,40,10a and 11a; *avr̥ṇītā* in 2,33,13c and 7,33,2d.

[66] Note that both cases refer to the same (Vala-) myth; for the injunctive, cf. HOFFMANN, "Inj.", 172 and 150.

[67] Cf. M. PETERS, Untersuchungen zur Vertretung der indogermanischen Laryngale im Griechischen, Wien 1980, 46 sq. for a discussion of the possible Greek evidence for assuming *h_1u̯el-.

[68] "Noten", a.l.; vNH have *avayā̃ḥ* in the electronic text but *avayā̂ḥ* in the printed one.

could be due to a root final laryngeal (*a.va.yā́.'as* < **auaiāHas, yā-* < **iaH-* "to pray")[69] although it seems unusual that in this type of "Zerdehnungen" of long vowels, the first element should be long[70]. The assumption is supported, however, by a formula which is repeated four times in RV 1, viz. *éṣā́ yāsīṣṭa tanúve vayā́m* "may it (the song) pray for apology for (the poet's) body, (going) forth with refreshment" (1,165,15c; 166,15c; 167,11c; 168,10c). If we accept OLDENBERG's view again who proposed to read *avayā́m* here (the initial *a-* being elided by true abhinihita sandhi), we arrive at the following scansion: *éṣā́ yāsīṣṭa tanúve 'vayā́am*[71]. This would match exactly with *avayā́aḥ* in 1,173,12b. A last verse that would fit into this picture is 7,40,5a *asyá devásya mīḷhúṣo vayā́(ḥ)* "an apology for this gracious god": Reading *'vayā́aḥ* with OLDENBERG again, we should achieve the same type of triṣṭubh cadence as in the examples dealt with before[72].

There are two more verses containing *vayā́(ḥ)* in irregular TC in the RV, viz. 6,13,1b *ágne ví yanti vaníno ná vayā́ḥ* and 6,24,3c *vṛkṣásya nú te puruhūta vayā́*. This is a different word, however: *vayā́* f. means "twig"; cp. the translations "Agni, (from you all goods) emerge like the twigs (branch off) from a tree"; and "like the twigs of a tree, your (graces grow), often called one (Indra)!". Are we to suppose that *vayā́* reflects a former **uaiHáh₂*, with a laryngeal motivating its use in TC?[73]

In 1,122,10d, a "Zerdehnung" of the syllable bearing the cadence ictus is proposed for a long *ū*: *víśvāsu pṛtsú sádam íc chū́raḥ*. Although there is no doubt that the *ū* must be due to a laryngeal (**ḱúh₁ro-*[74], cp. *śávas-* as dealt with above), there is hardly any reason why this might have to be dissolved into two syllables, all the more since in the given cadence, the second syllable ought to be the long one (**śu.ū́.raḥ*). Therefore we should rather suspect that *śū́raḥ* was substituted for *śávīraḥ* here, i.e. a full grade variant (**śáuəra-* < **ḱéuh₁ró-*)[75]. We have to consider, however, that this latter word is rarely attested, appearing as a feminine only (1,32,2b and 1,30,17b *śávīrayā* instr.sg.).

A last set of irregular cadences that might be explained in laryngealistic terms contains *apā́m*, gen.pl. of *áp-* "water" as in 3,1,5c *śocír vásānaḥ pári āyur apā́m* "(Agni,) dressing himself in glowing fire and in the vitality of waters" (the other examples: 1,181,1b; 2,19,3a; 2,35,11b; 6,13,1d; 6,17,12b; 7,101,2a). But although *áp-* certainly derives from a preform with h_2-, **h₂ep-*,

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[69] For the connection of *avayā́-* with the root *yā-* cf. NARTEN, "Sigm.Aor.", 210 with n. 632; MAYRHOFER, "EWAia" II, 408 sq. s.v. *YĀ²*.

[70] Cf. OLDENBERG, "Noten", 165, who states: "Allerdings ist die Setzung dieses *ā* (◡◡) im Triṣṭubhausgang (—̆) eine Lizenz, die eben hingenommen werden muß".

[71] vNH read *ā́ iṣā́ yāsīṣṭa tanúve vayā́m* which has the disadvantage that there are both an unusual caesura ("rare caesura 3|") and an unmotivated cadence.

[72] In vNH, the verse is treated as "Tr. 10 syllables" so that it was not counted in the present study; there is no indication of the necessary "Zerdehnung".

[73] Is the word connected with the numeral "two" as German *Zweig* suggests? Can it contain the dual formant, *-ih₁-*?

[74] Cf. MAYRHOFER, "EWAia" II, 650 sq.

[75] Cf. MAYRHOFER, "EWAia" II, 624.

these cases are not easy to account for. Considering that in compounds, the zero grade of the (root) stem was used yielding word forms such as _dvīpá-_ "island" < *_dui̯-h$_2$p-ó-_ or _anūpá-_ "marshland" < *_(h$_1$)enu-h$_2$p-o-_[76], we might be tempted to assume that (non-ablauting) _apā́m_ came to replace a former _īpā́m_ < *_əpā́m_ < *_h$_2$pṓm_. But of course, such a development would be unique for a laryngeal in word initial position, and so we should look for another explanation. On the basis of 1,181,1b _adhvaryántā yád unninīthó apā́m_ "(what are the goods) that you bailed out from the waters by sacrificing", we could propose to read _apā́m_ as *_pa͡am_ with a "Zerdehnung" typical for the genitive plural ending, here used metrically in a similar way as the one of _avayā́-_ discussed above. In 1,181,1b (and 2,19,3a; 7,101,2a) where a word final _-o_ precedes, *_pa͡am_ could well have been substituted by _apā́m_ because it was erroneously taken for an abhinihita sandhi variant. The substitution would then have been extended to all instances of _apā́m_. Note, however, that trisyllabic _apâm_ is assumed two times in AC and once in JC by vNH (1,46,4a and 8,25,14a / 9,108,10c), thus producing another type of irregular cadence (cp. _utá naḥ síndhur apâm_). As the trisyllabic scansion seems necessary several times in the centerpiece of both T and J verses too (1,122,3b; 4c; 168,2c; 186,5c; 2,4,2a; 4,21,8b; 5,41,10b; 6,13,3d; 52,15b; 10,49,2b; 93,5a[77]) the case of _apā́m_ requires some further study.

All in all, we arrive at a number of 100 cases (from 215) at least where irregular cadences of 11-syllable verses can be explained by assuming laryngeal residues. This is nearly one half, an astonishing amount even if a few examples remain doubtful.

The remaining irregular cadences cannot be dealt with _in extenso_ here; a short notice will suffice to demonstrate the problems involved.

1,62,3d; 2,19,1d; 5,33,5a; 6,47,31c; 7,3,5b: _náraḥ_ "men"; influenced by synonym _jánāḥ_?

2,19,5b; 20,5c; 6,24,8b: _stavā́n_ and 3,18,4a: _stutó_, "passive" participles of _stu-_ "to praise"; cf. WATKINS, IGr III/1, 143 sq. (who does not account for the metrical problem, however);

6,67,11d _yunájan_, 10,12,4c _áyan_: subjunctive forms; *_i̯u.náǰ.'an_, *_ái̯.'an_?

10,50,1b _viśvābhúve_ compound "present to all": read _viśva.ābhúve_, without contraction of vowels in the compound seam, thus yielding a Jagatī cadence?

1,121,1a: _devayatā́m_; 1,122,11d _ráthavate_; 1,174,9a and 6,20,12a _dhúnimatīḥ_; 50,11a _vā́javato_; 9,96,4b _bṛhaté_, 10,3,1c _bṛhatā́_: irregular full grade (_-ante_ etc.) instead of zero grade?

1,100,8c and 2,42,1d _vidat_ inj.aor.; both verses with Jagatī cadence (_jyótir vidat_ / _víśviyā vidat_)? But cp.

3,29,7c _viśvavídam_ acc.sg. "all-knowing";

1,33,9a _ródasī ubhé_; 10,1,7a _agna ubhé_: both verses with Jagatī cadence?

9,93,4a: imperative _rada_ "scratch out"; restitute *_rāda_ as in YAv. _rāδaiti_?

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[76] Cf. MAYRHOFER, "EWAia" I, 81 for further examples.

[77] To this list, 1,149,4c may be added at least from verses containing 10 syllables. For 1,61,12d, 7,34,15a, 10,46,1b and 10,46,2a, this would be possible too, but these hymns contain several other 10 syllable verses.

10,105,7c; 149,2c: *rájaḥ* nom.acc.sg.ntr. "darkness / atmosphere";
3,31,20c; 6,24,10bc; 63,2c: *riṣáḥ* gen.abl. of the root noun "damage"; in 3,31,20c and 6,63,2c there is possibly a Jagatī cadence (*pāhi no riṣó, yāatho riṣó*) but not in 6,24 (*pāhi riṣó*);
3,58,6b: *jahnā́vyām* loc.sg.fem. "in the Jahnu clan"; Jagatī cadence *jahnā́viyām*?
8,46,17a *jágmaye* dat.sg. "the going one": different verse splitting should be envisaged, cf. OLDENBERG, "Noten" a.l.;
7,93,5c *devayúbhiḥ*: substitute *devayádbhiḥ* as in 10,69,8d?

Further unique cases: 1,59,4a: *sūnáve ródasī*; 1,104,3b: *phénam udán*; 1,117,22b: *práti airayatam*; 1,121,15a: *ví dasad*; 1,126,1c: *ámimīta savā́n*; 1,173,11b: *mánasā pariyán*; 2,19,6a: *sadívaḥ sā́rathaye*; 2,19,6c: *ca náva*; 2,30,6a: *yáṃ vanuthó*; 4,13,3a: *támase vipŕ̥ce*; 4,26,6b: *mandrám mádam*; 5,2,1d: *níhitam arataú*; 5,33,10c: *saṃváraṇasya ŕ̥ṣer*; 5,33,3b: *yád ásan*; 5,41,10d: *riṇāti vánā*; 6,1,12c: *bṛhatī́r āré-aghā*; 6,4,7c: *śávasā devátā*; 6,10,6a: *agna uśán*; 6,11,1c: *mitrā́váruṇā nā́satiyā*; 6,12,6c: *yāsi duchúnā*; 6,24,4b: *srutáyaḥ saṃcáraṇīḥ*; 6,24,7c: *asya tanū́*; 6,40,5a: *yád ŕ̥dhag*; 6,49,12d: *vacanáṣya vípaḥ*; 6,64,5b: *jóṣam ánu*; 6,66,5a: *cid ayā́*; 6,68,2a: *devátātā tujā́*; 7,76,1d: *víśvam uṣā́ḥ*; 7,103,10a: *ajámāyur adāt*; 8,46,28a: *yáḥ suvarā́l*; 9,89,3b: *asyá pátim*; 9,94,1a: *vājínīva śúbha*; 9,94,1b: *ná víśaḥ*; 9,94,3a: *kā́viyā bhárate*; 9,97,1b: *apr̥kta rásam*; 9,97,32c: *bṛhatáḥ sudívaḥ*; 10,3,6a: *dadr̥śānápaver*; 10,16,6b: *śvā́padaḥ*; 10,22,4a: *vā̆tasya dhúnī*; 10,22,11a: *indara dānā́pnasa*; 10,74,2d: *kr̥ṇávanta suvaíḥ*; 10,79,5b: *juhóti púṣyati*; 10,95,4b: *vásty ántigr̥hāt*; 10,110,5d: *bhavata suprāyaṇā́ḥ*; 10,164,3a: *niḥśásā abhiśásā*.

Note that some hymns occur several times in this list as, e.g., 9,94 with three irregular cadences. Many further investigations (into cadences of all verse types) are required before we can draw our conclusions from this fact.